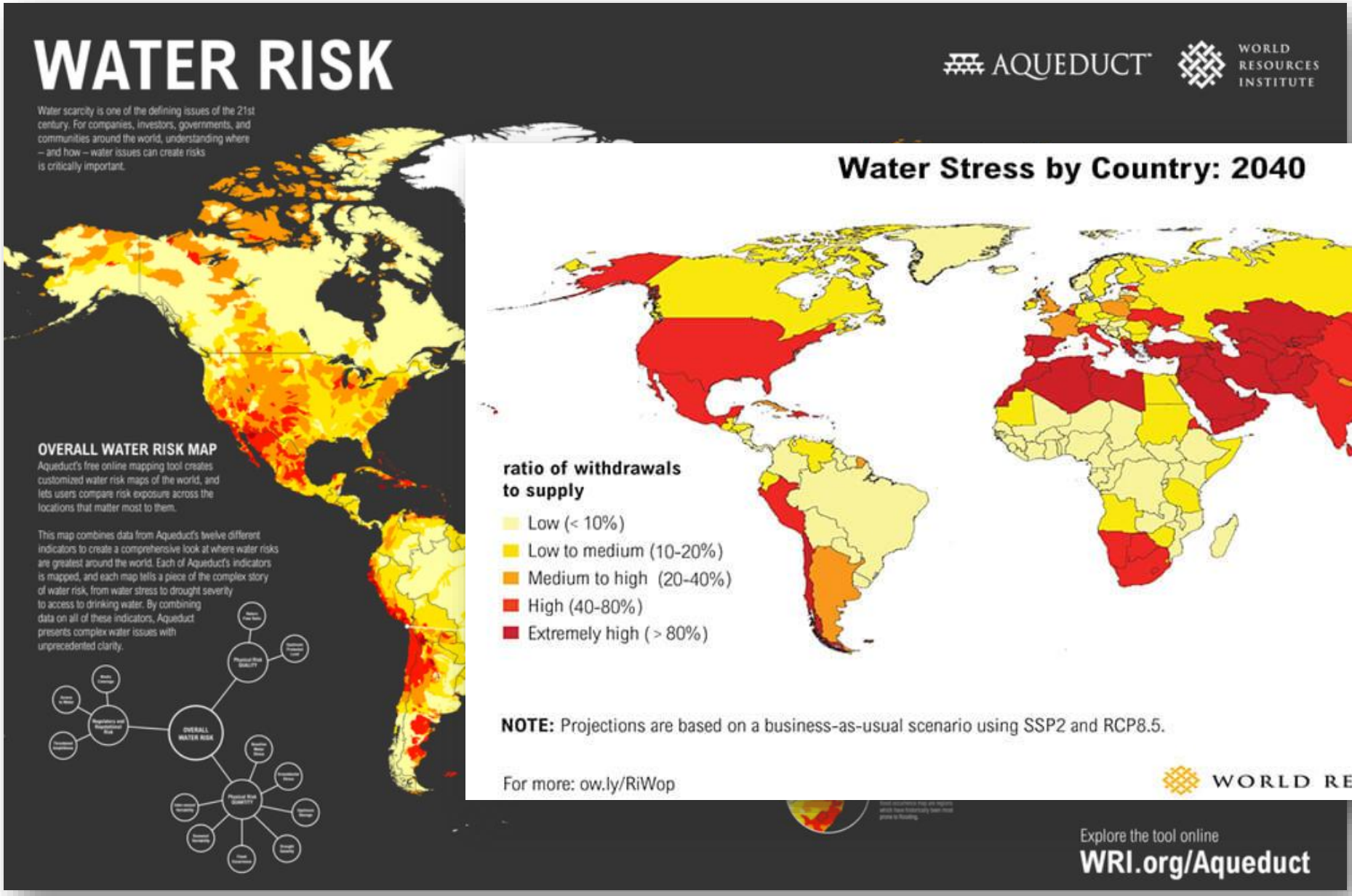
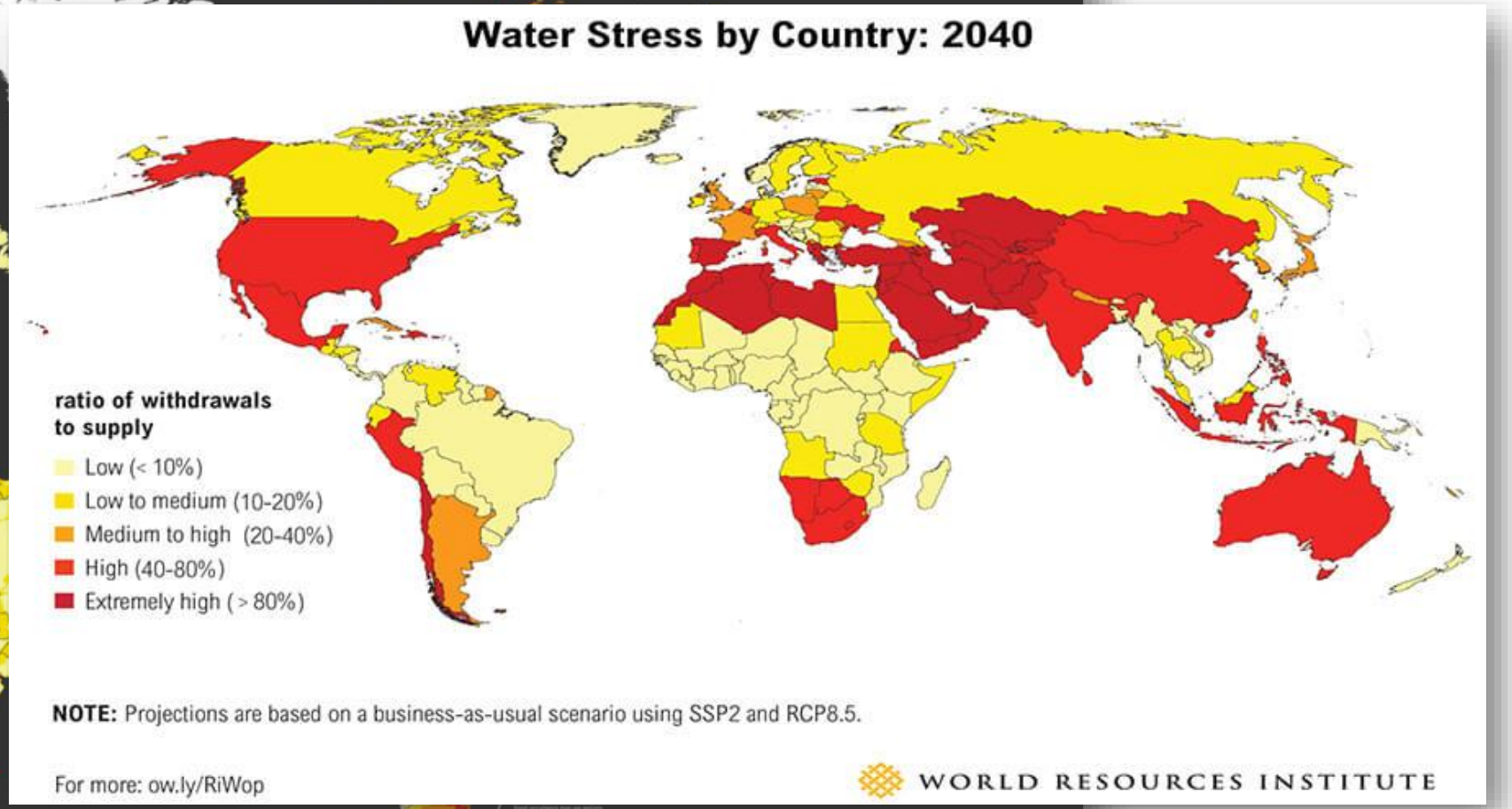
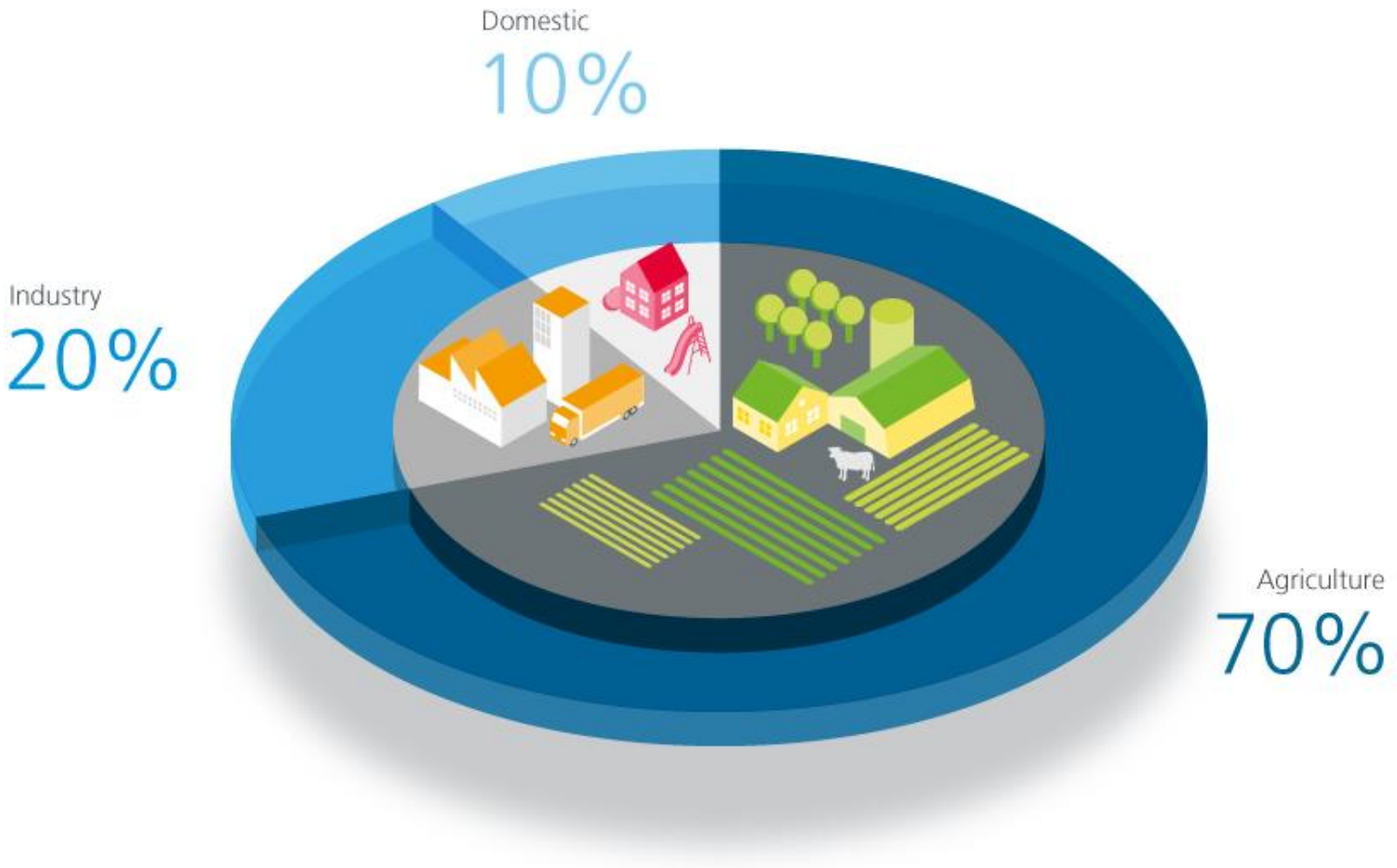

AQUA4D®
[ Swiss efficiency. ]



# Global water consumption today



**Chile suffers the worst drou… in 60 years**

*Chile's populated capital Santiag… Valparaiso region, could be left u… 2030.*

by L…

8 Jul…

**Addressing Water Sc… Through Resilient Fa… Big Opportunity For … Companies To Take …**

**Anne Field** Contributor

Entrepreneurs

South Africa unprepared for drought disaster, … warns government


Food Business News

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…out a grave water crisis still

In November 2018, the first turbine of the Rogun hydropower plant went into operation. On September 9, 2019, the second turbine will be commissioned in honor of Tajikistan's Independence Day.

AQUA4D®

# “Innovative Thinking for Fundamental Changes”

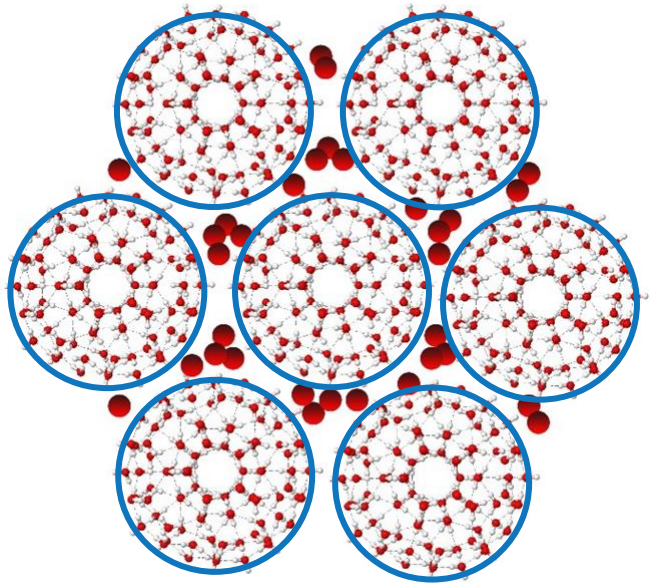
Our technology

# Customized Hardware as a Service (HaaS) for Agriculture 4.0 irrigation

Our systems are fully modular and easily integrated into your existing irrigation setup. All flow rates are catered to, with Treatment Units added as required. Made in Switzerland from highest-quality components, the AQUA4D® system requires no maintenance or consumables, and makes water systems and the overall irrigation process more sustainable, efficient and less labor-intensive.

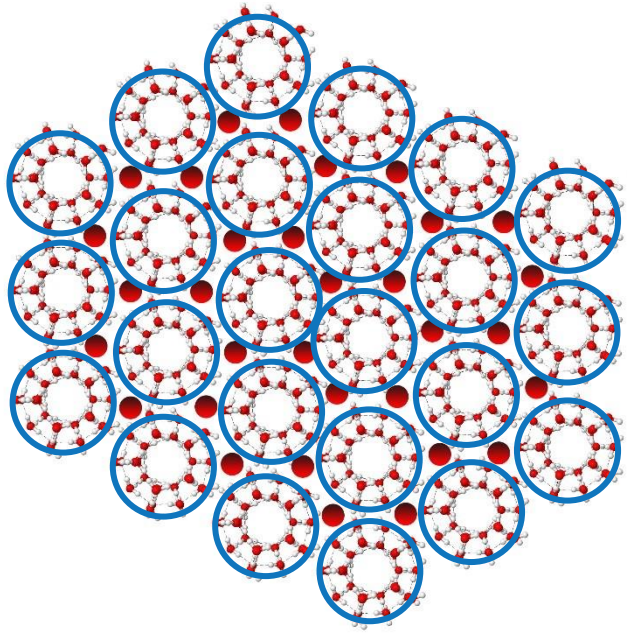
**Contact us** today to see where AQUA4D would fit into your setup.

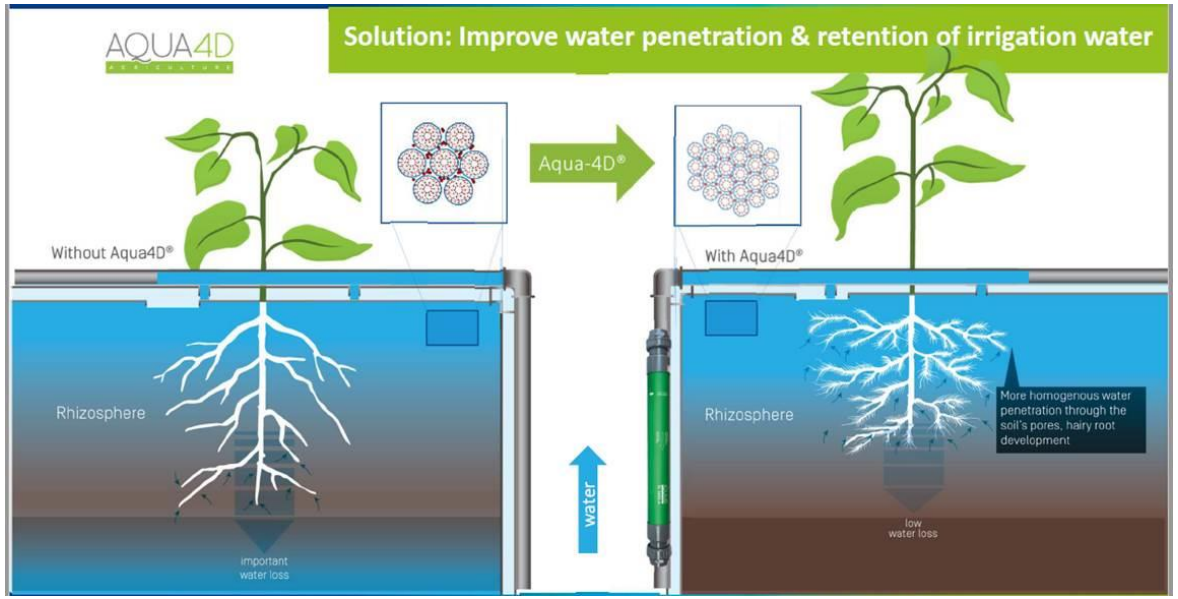
## Agua NO tratada

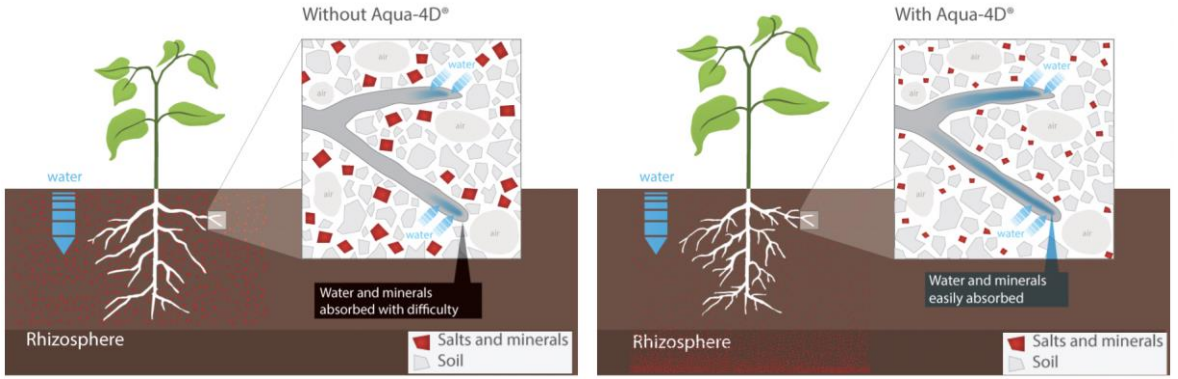


AQUA4D®
**Sustainable**
**Precision Treatment**

## Agua tratada con AQUA4D®





# SOIL RESTORATION + WATER EFFICIENCY

AQUA4D®: a unique technology that restores salt-saturated soils while using less water in the process.

AQUA4D
WATER SOLUTIONS

PROTOCOLO DE TRABAJO SAN JOSÉ FARMS, PALTO HASS – MEXÍCOLA - EFICIENCIA HÍDRICA – ILLAPEL.

05.08.2020 | Patrick Mac Kinnon | Ingeniero Agrónomo

! Este documento se debe completar teniendo en cuenta la situación del cliente y sus requisitos y restricciones.

Tabla de contenido

# Forging Shared Value

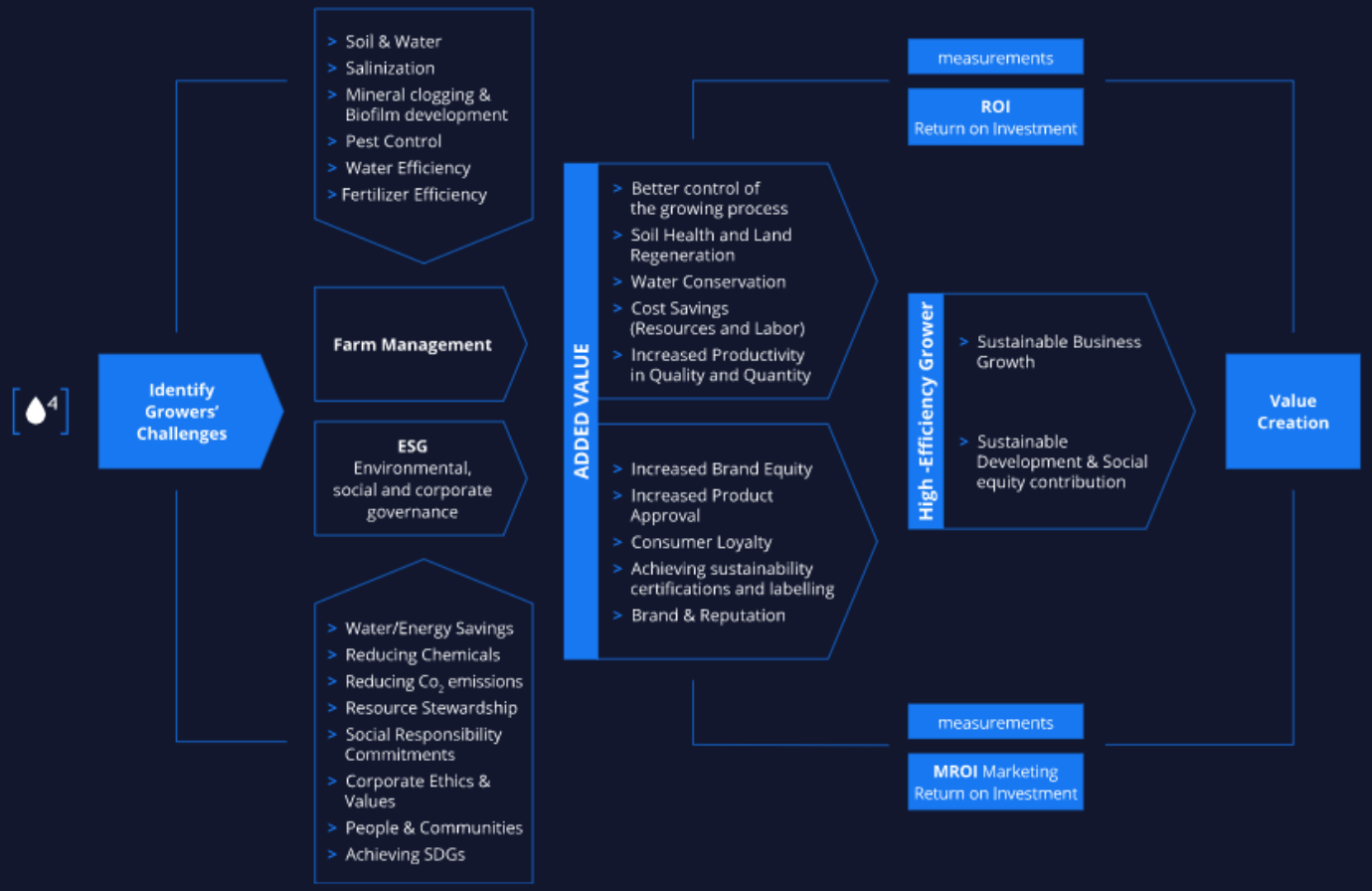
The AQUA4D® Shared Value Plan creates opportunities for growers and agribusinesses to incorporate shared value into the heart of their business model. With sustainable contributions such as reducing carbon footprints and improving resource use, these are companies which have a positive impact on society, their value chain, and the wider environment.

**Market standards**
Regulatory requirements

**Water & resources management**

**Collective and leading action**
Positive community relations

**Sustainable business growth**
Development and social equity contribution




WE SUPPORT UN GLOBAL COMPACT

AQUA4D®
[ Swiss efficiency. ]

**Richard:** Well, to give you an example, during the drought there were of course farmers with a significant lack of water. They were having to grow these trees with maybe a 20% water allocation – normally you want to put on 40 inches, but they had 8 inches to work with through the year. And of course, that first year they had a minimal yield, but the trees were stunted and there was no new growth. This went on for two years, but even after the drought subsided, the effects continued, with reduced yields for several years...

*Gemperle & Aqua-4D's CTO at the orchard, March 2019*

*The Almond Board of California has set a goal to save around 25% water – how realistic do you think this is?*

**Richard:** The goal is simultaneously less water use and converting to extremely efficient systems; I think it's very much achievable. For example, when we redo new orchards and switch from flood irrigation to micros or double-line drip we easily reduce our water by 25%. If you've already installed high efficiency irrigation systems and have state of the art monitoring, reducing water use becomes more difficult.

*What do you say to the common reports of significant water use by the almond industry in California?*

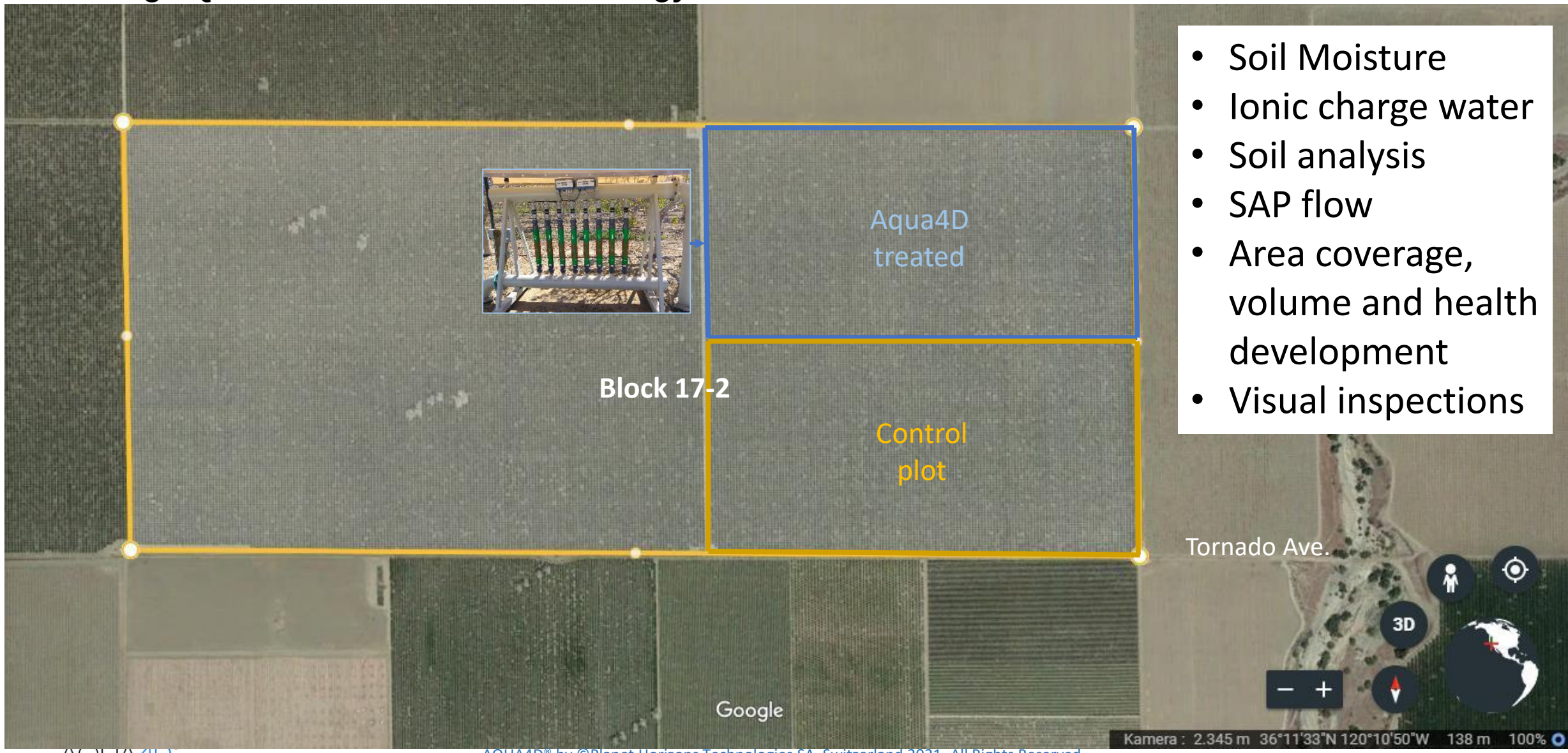
**Richard:** There's a water function for every single commodity you grow, whether it's wheat, olives, almonds, whatever. And almonds are pretty much on the middle of that. They have quantified water use

**Identify their Challenges:**

**Save around 25% water demand**

"California produces a whopping 81% of the world's almonds but has suffered from severe water shortages over the last decade. What if this could be turned on its head, with even less water but higher yields?"

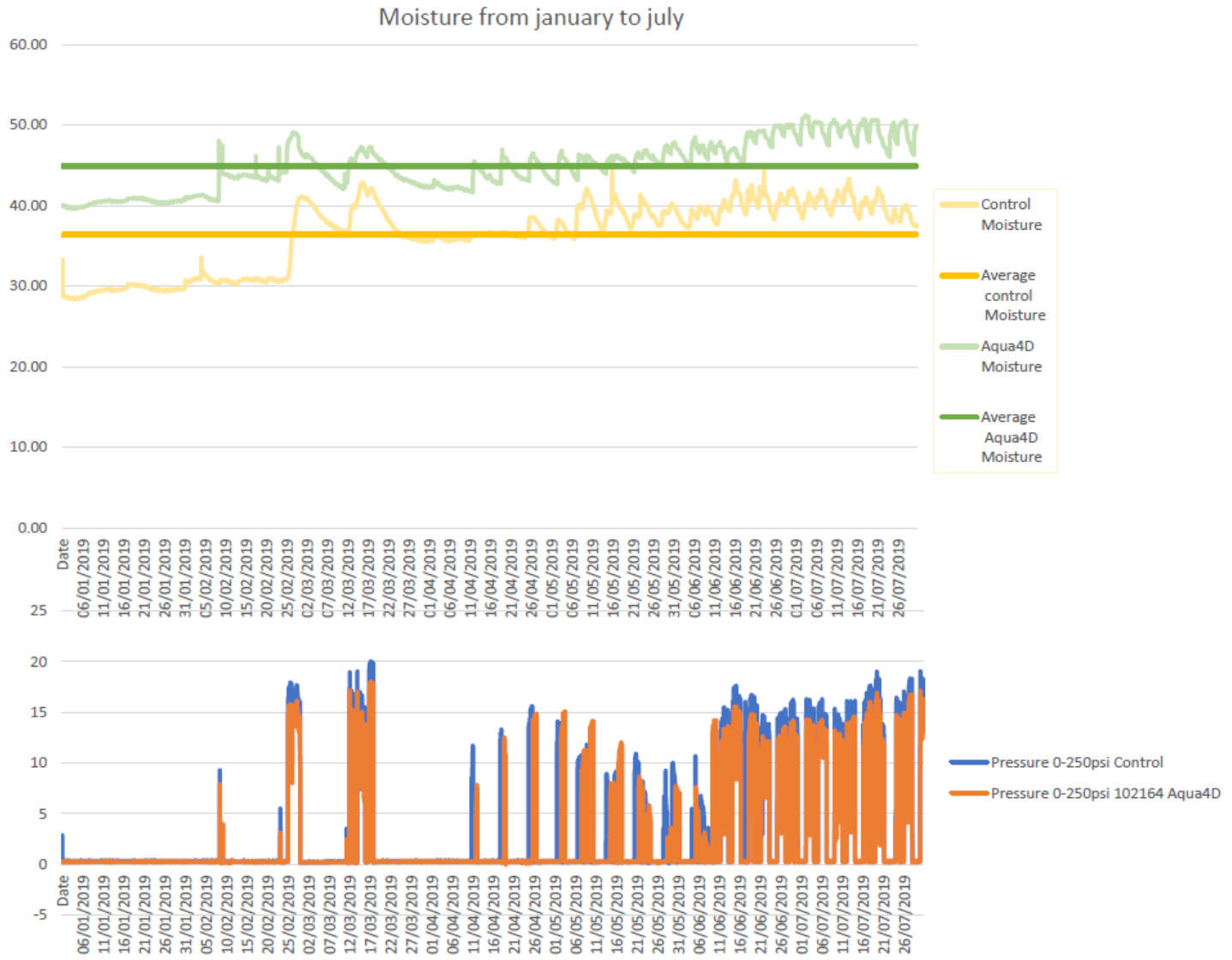
# Monitoring AQUA4D® Water-Smart Technology 2019

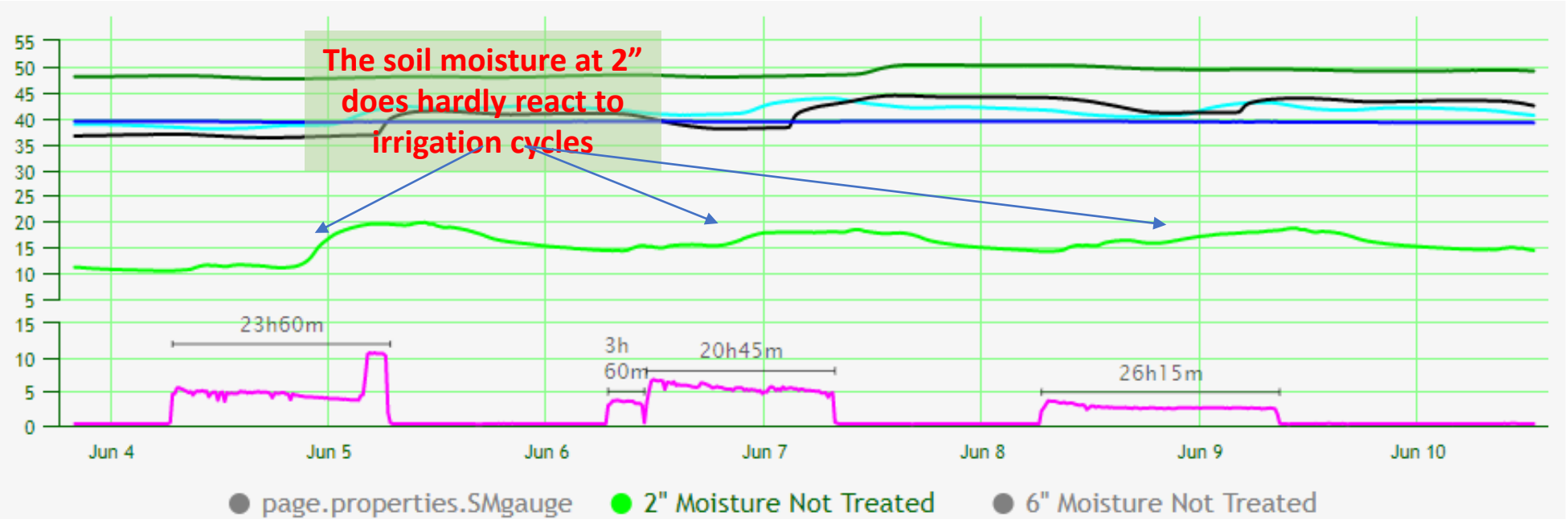



- Soil Moisture
- Ionic charge water
- Soil analysis
- SAP flow
- Area coverage, volume and health development
- Visual inspections

Aqua4D 23%

Better soil water retention after each irrigation, and better hydration of the soil with each watering.
Improvement of the RFU (easily usable reserve)



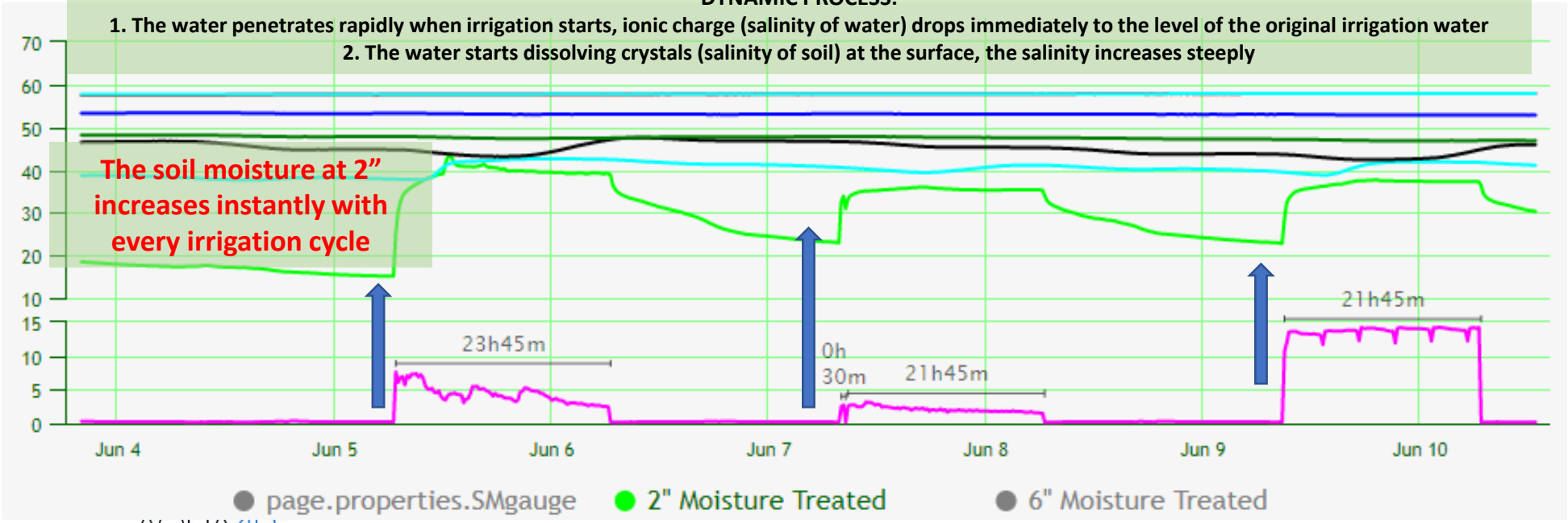



**NON-TREATED** WATER HAS CLEARLY PENETRATION PROBLEMS. WHEN IRRIGATING, THE SOIL MOSITURE AT 2” DOES NOT INCREASE. IT CLOGGS UP THE SOIL WITH CRYSTALS

**DYNAMIC PROCESS:**

**1. The water penetrates rapidly when irrigation starts, ionic charge (salinity of water) drops immediately to the level of the original irrigation water**

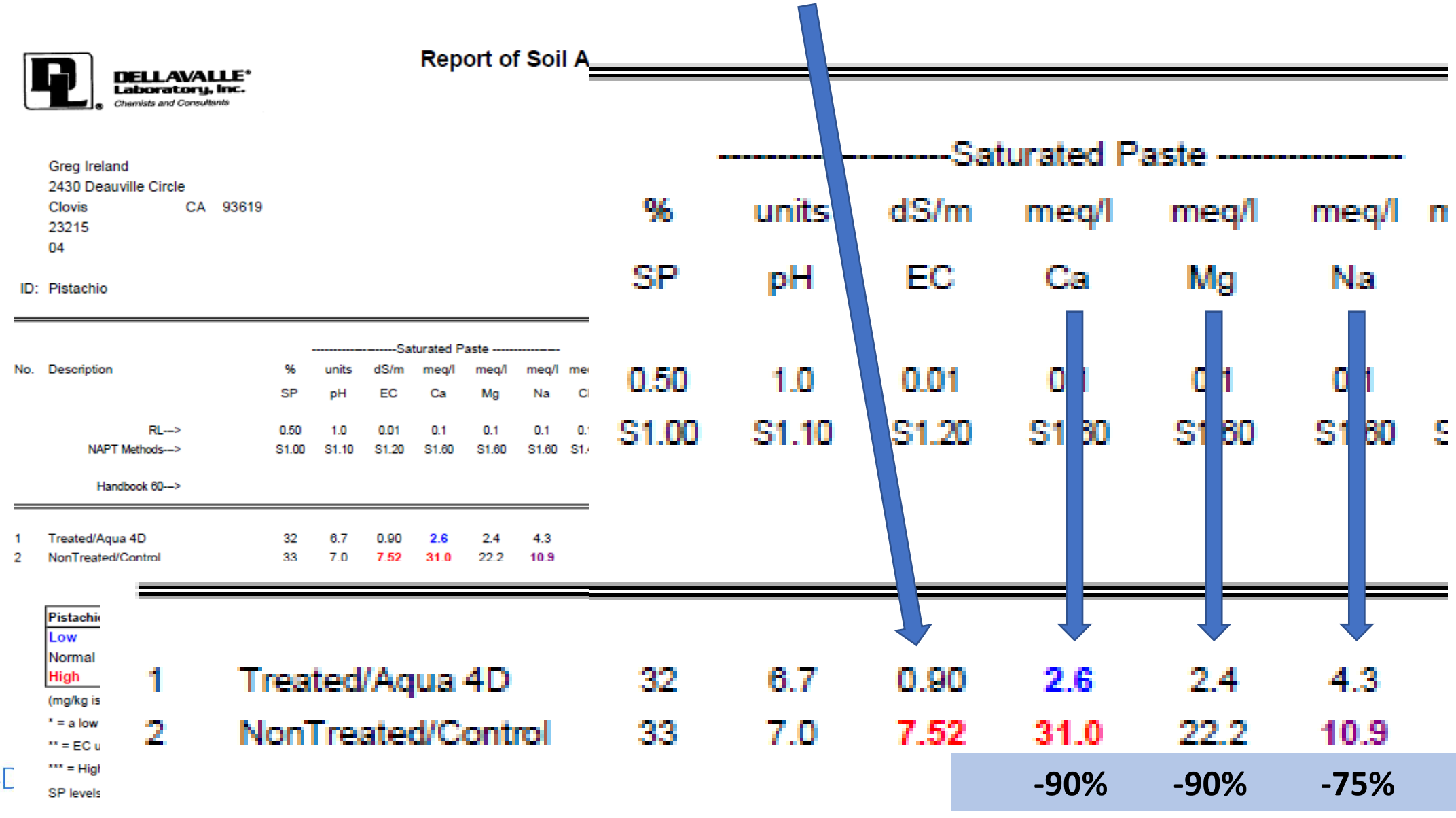
**2. The water starts dissolving crystals (salinity of soil) at the surface, the salinity increases steeply**




**AQUA4D®-TREATED WATER** PENETRATES IMMEDIATELY INTO THE SOIL, DISSOLVES EXISTING CRYSTALS IN THE SOIL AND MAINTAINS THE SOLUBILIZED SALTS IN IONIC FORM

**The Ionic charge of the water increases every morning, does not respond to irrigation**

# AQUA4D® reduced the EC of the SOIL by 85 % within 2 years



DELLAVALLE Laboratory, Inc.
Chemists and Consultants

Report of Soil A

Greg Ireland
2430 Deauville Circle
Clovis CA 93619
23215
04

ID: Pistachio

| No. | Description | % | units | dS/m | meq/l | meq/l | meq/l | me |
|---|---|---|---|---|---|---|---|---|
| | | SP | pH | EC | Ca | Mg | Na | Cl |
| | RL--> | 0.50 | 1.0 | 0.01 | 0.1 | 0.1 | 0.1 | 0.1 |
| | NAPT Methods--> | S1.00 | S1.10 | S1.20 | S1.60 | S1.60 | S1.60 | S1.4 |
| | Handbook 60--> | | | | | | | |
| 1 | Treated/Aqua 4D | 32 | 6.7 | 0.90 | 2.6 | 2.4 | 4.3 | |
| 2 | NonTreated/Control | 33 | 7.0 | 7.52 | 31.0 | 22.2 | 10.9 | |

Saturated Paste

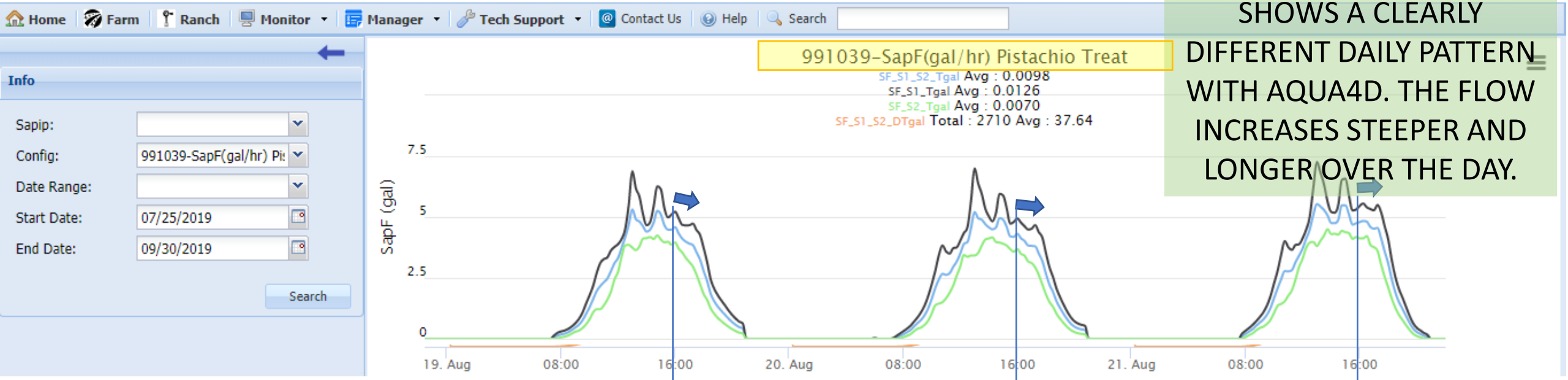
| | | % | units | dS/m | meq/l | meq/l | meq/l | m |
|---|---|---|---|---|---|---|---|---|
| | | SP | pH | EC | Ca | Mg | Na | |
| | | 0.50 | 1.0 | 0.01 | 0.1 | 0.1 | 0.1 | |
| | | S1.00 | S1.10 | S1.20 | S1.60 | S1.60 | S1.60 | S |
| 1 | Treated/Aqua 4D | 32 | 6.7 | 0.90 | 2.6 | 2.4 | 4.3 | |
| 2 | NonTreated/Control | 33 | 7.0 | 7.52 | 31.0 | 22.2 | 10.9 | |
| | | | | | -90% | -90% | -75% | |

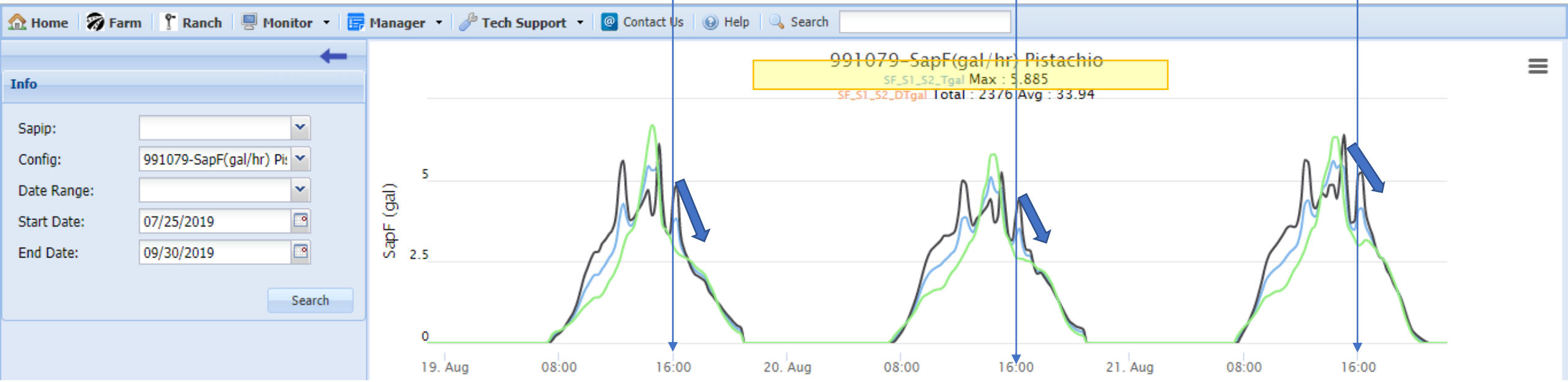
Pistachi
Low
Normal
High
(mg/kg is
* = a low
** = EC u
*** = Higl
SP levels

AQUA4D

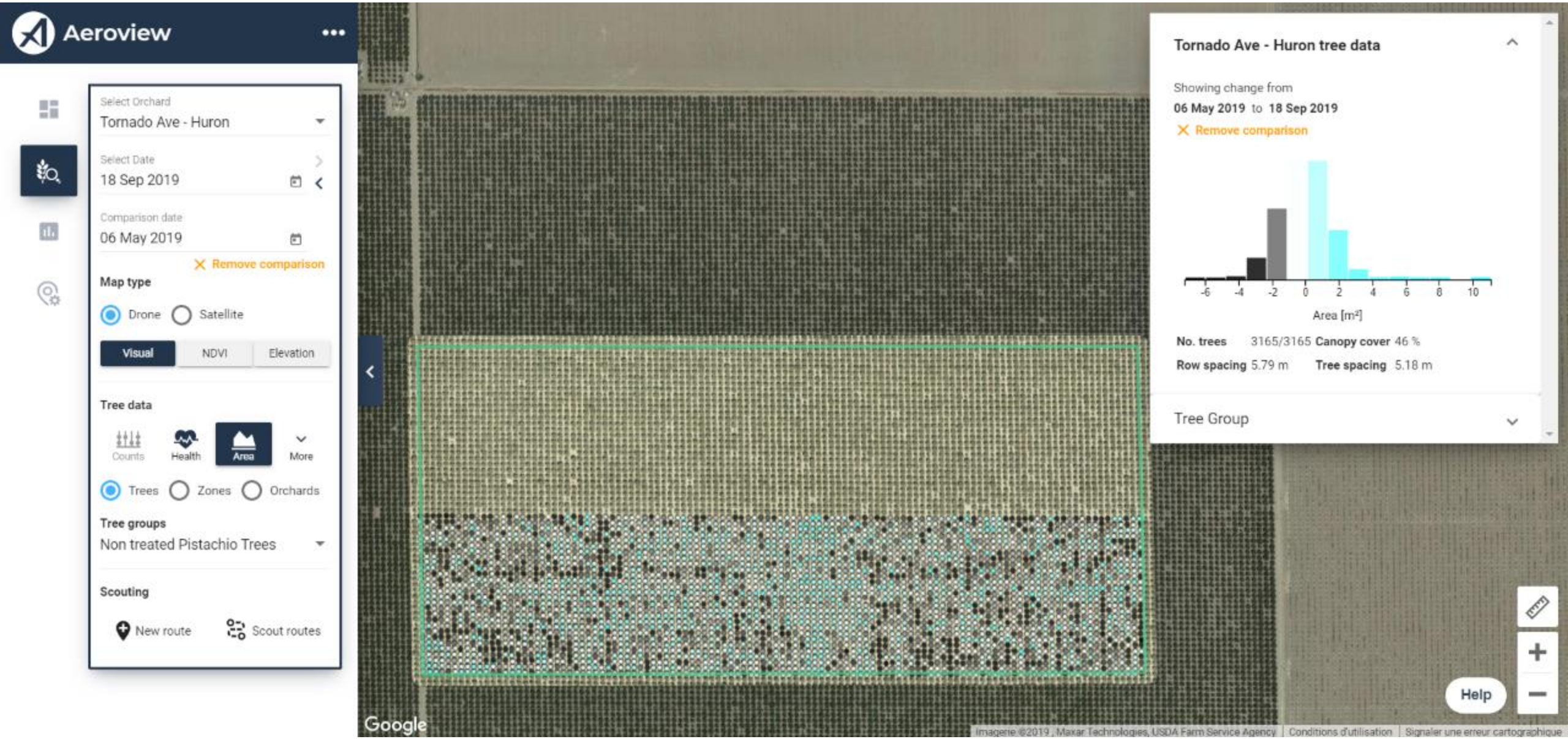
2GROW

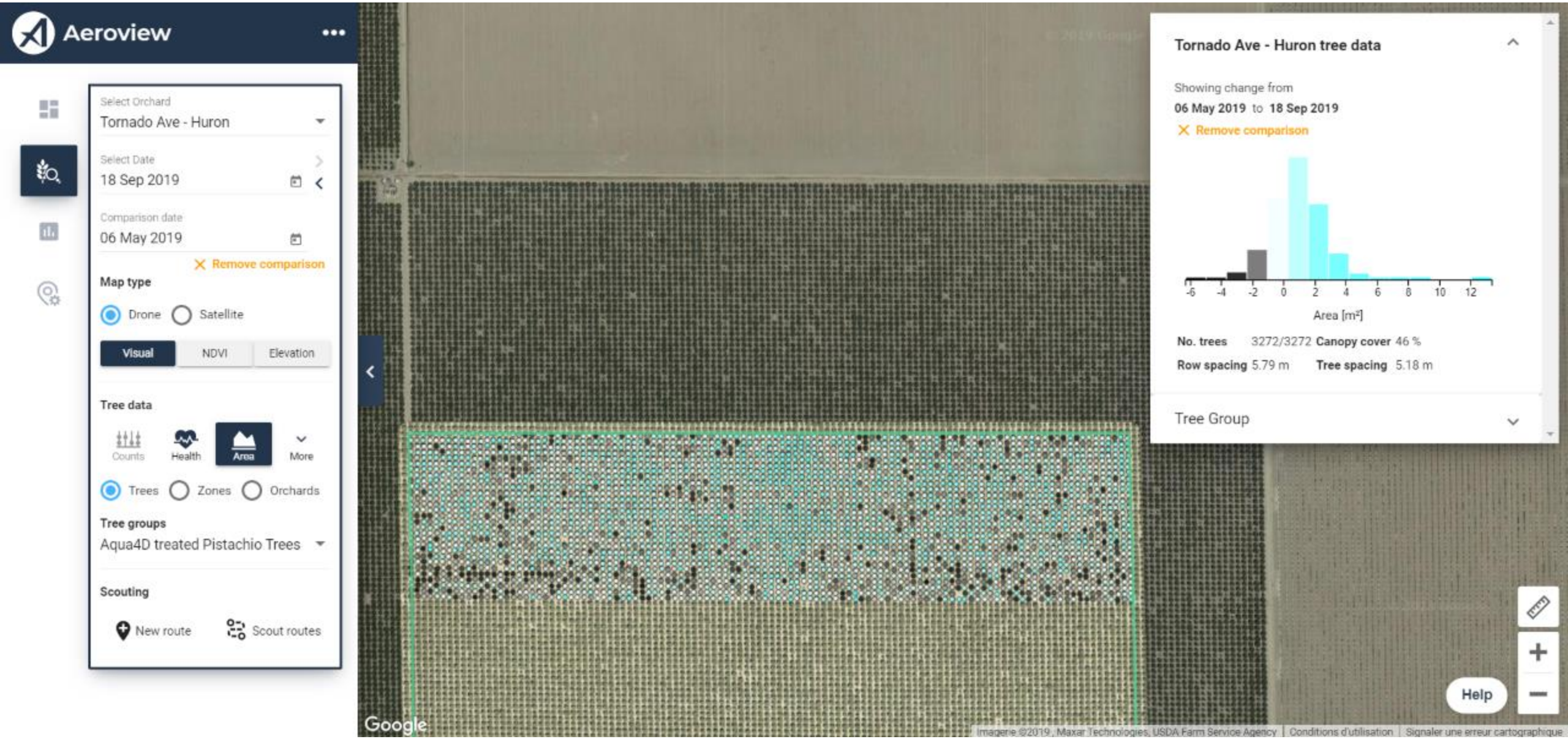
THE SAP WATER FLOW SHOWS A CLEARLY DIFFERENT DAILY PATTERN WITH AQUA4D. THE FLOW INCREASES STEEPER AND LONGER OVER THE DAY.




AQUA4D®






AQUA4D®

# +31.5%
## soil moisture improvement

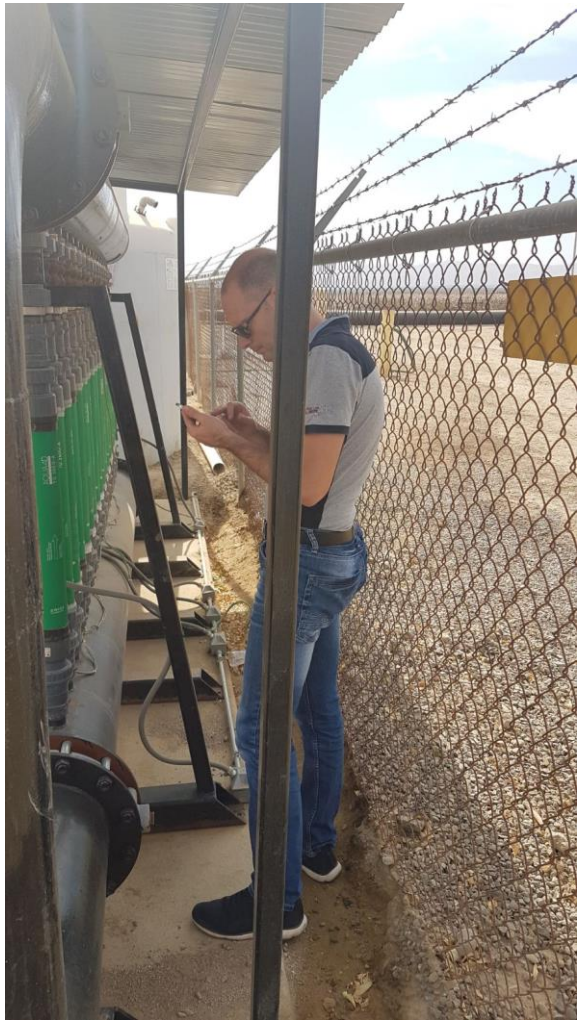
| Plot | Soil moisture in the root zone (cbar) |
|---|---|
| Control | 116.75 |
| **Aqua-4D®** | 88.8 |
| Variation | 31.5% |

| Plot | 2016 | 2017 | 2018 |
|---|---|---|---|
| Aqua-4D vs Control yield improvement | 20% | 48% | 65% |
| Comparative improvement | - | **24%** | **38%** |

# +38%
## production increase

AQUA4D®

# Some projects in North America




# Some projects in Africa







# Some projects in South America

## Some projects in Europe






# Some projects in Asia

# AQUA4D® Shared Value Plan




Funded by the Horizon 2020 Framework Programme of the European Union

# Industries we serve

Our water-smart technology is used in various settings, with invariably positive effects: greater productivity, resource efficiency and sustainability.

## Precision Irrigation


## Sustainable Buildings

## Animal Health

AQUA4D®


- **50,000 kg to 150,000 kg of CO2 reduction per 20 m3 / h treated by Aqua-4D® systems over an estimated service life of 10 years**

WE SUPPORT UN GLOBAL COMPACT CEO Water Mandate





AQUA4D contributes with 11 of the 17 sustainability goals set by the United Nations

AQUA4D®

IST GROUP
Innovative Solutions Through Technology

# Gracias


AQUA4D® and HAS University, The Netherlands, April 2019